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EXAMINER

BHAT, ADITYA S

ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 11/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/802,513

Applicant(s)

HSIUNG ET AL.

Examiner

Aditya S Bhat

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2003.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-55 is/are pending in the application.
- 4a) Of the above claim(s) 1-28 and 42-50 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 May 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \*   c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_      6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election with traverse of group III in Paper No. 16 is acknowledged. The traversal is on the ground(s) that the groups are directed towards the same invention because Group III claims are drawn to a method for training computing devices for classification or identification purposes. Group I claims are related to a computer program implementing the method of Group III claims; Group II claims are related to a technique for preprocessing information for identification or classification purposes; and Group IV claims are drawn to a system for identifying a substance capable of producing olfactory information, where the system includes a user interface apparatus and an information object, where the information object includes processing as embodied by the Group III claims.

The argument was found persuasive and groups I -IV will be examined.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-10, 17- 41 and 48-55 are rejected under 35 U.S.C. 102(e) as being anticipated by Sunshine et al. (USPN 6,422,061).

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With regards to claim 1, Sunshine et al. (USPN 6,422,061) teaches a system comprising memory including a computer code product for training computing devices for classification or identification purposes for one or more substances capable of producing olfactory information, the memory comprising:

a code directed to providing at least a first data from a first substance and a second data from a second substance to a computing device, the data being comprised of a plurality of characteristics to identify the substance;(Col.5 & 6, lines 45-65 & 1-5 )

a code directed to normalizing at least one of the characteristics for each of the first data and the second data; (1376; figure13d )

a code directed to correcting at least one of the characteristics for each of the first data and the second data; (Col. 28, lines 1-10)

a code directed to processing one or more of the plurality of characteristics for each of the first data and the second data in the computing device using pattern recognition to form descriptors to identify the first substance or the second substance; (Col. 1, lines 30-36) and

a code directed to storing the set of descriptors into a memory device coupled to the computing device, the set of descriptions being for analysis purposes of one or a plurality of substances.(Col. 5, lines 57-59)

With regards to claim 2, 18, 30, and 41 Sunshine et al. (USPN 6,422,061) teaches the characteristics can be selected from olfactory information, temperature, color, and humidity. (Col. 1, lines 30-36)

With regards to claim 3, 19, and 31 Sunshine et al. (USPN 6,422,061) teaches the pattern recognition is a Fisher Linear Discriminant Analysis. (Col. 28, lines 10-15)

With regards to claim 4, 20, and 32 Sunshine et al. (USPN 6,422,061) teaches the first data and the second can be selected from a transient stream of data or from a static source of data. (Col.1, lines 1-2)

With regards to claim 5, 21, and 33 Sunshine et al. (USPN 6,422,061) teaches the steps are performed continuously in the computing device. (Col.26, lines 49-50)

With regards to claim 6, 22, and 34 Sunshine et al. (USPN 6,422,061) teaches the data are captured from an array of olfactory sensors. (Col. 1,lines 30-32)

With regards to claim 7, 23, and 35 Sunshine et al. (USPN 6,422,061) teaches the olfactory sensors are comprised of a polymer component. (Col.12, lines 5-6)

With regards to claim 8, and 36 Sunshine et al. (USPN 6,422,061) teaches the first data and the second data are provided through a worldwide network of computers, the worldwide network of computers comprising the Internet. (Col. 17, lines 1-2)

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With regards to claim 9, and 37 Sunshine et al. (USPN 6,422,061) teaches the first data and the second data are captured from a first sensor and a second sensor, respectively, disposed in an array. (Col.1, lines 30-32)

With regards to claim 10, and 38 Sunshine et al. (USPN 6,422,061) teaches the first data and the second data are captured from a first sensor and a second sensor, respectively, disposed in an array and transported through the Internet. (Col. 17, lines 1-2)

With regards to claim 11, Sunshine et al. (USPN 6,422,061) teaches system including memory and computer codes for preprocessing information for identification or classification purposes, the system comprising:

- a code directed to acquiring a voltage reading from a sensor of a sensing device, the sensor being one of a plurality of sensors that are disposed in an array; (1220 & 1222 ;figure;12A)

- a code directed to determining if the voltage is outside a baseline voltage of a predetermined range; (Vref; figure 12A) and

- a code directed to rejecting the sensor of the sensing device for use in acquiring sensory information, if the voltage is outside the predetermined range. (Vref; figure 12A)

With regards to claim 12 and 43, Sunshine et al. (USPN 6,422,061) teaches a code directed to repeating steps of acquiring and determining for any other sensors in the plurality of sensors in the array to detect a faulty sensor that is outside the predetermined range. (Vref; figure 12A)

With regards to claim 13 and 44, Sunshine et al. (USPN 6,422,061) teaches the sensors in the array acquires a respective voltage reading simultaneously. (figure 12 A)

With regards to claim 14 and 45, Sunshine et al. (USPN 6,422,061) teaches a code directed to exposing at least one of the sensors to a sample and acquiring a sample voltage from the sample. ( figure 12A)

With regards to claim 15 and 46, Sunshine et al. (USPN 6,422,061) teaches a code directed to exposing at least one of the sensors to a sample and acquiring a sample voltage from the sample, if the sample voltage is outside a predetennined sample voltage range, reject the one exposed sensor. (Vref; figure 12A)

With regards to claim 16 and 47, Sunshine et al. (USPN 6,422,061) teaches the plurality of sensors comprise an olfactory sensor, the olfactory sensor being comprised of a polymer component. (Col. 12, line 5-6) (Col.1, lines 30-31)

With regards to claim 17, Sunshine et al. (USPN 6,422,061) teaches system for classifying or identifying one or more substances capable of producing olfactory information, the method comprising:

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a process manager; (Col. 24, lines 44-46)

an input module coupled to the process manager for providing at least a first data from a first substance and a second data from a second substance to a computing device, the data being comprised of a plurality of characteristics to identify the substance; (Col. 24, lines 24-46)

a normalizing module coupled to the process manager for normalizing at least one of the characteristics for each of the first data and the second data; (Col. 24, lines 44-46)

a patterning recognition module coupled to the process manager for processing one or more of the plurality of characteristics for each of the first data and the second data in the computing device using pattern recognition to form descriptors to identify the first substance or the second substance; (Col.24, lines 40-43) and

an output module coupled to the main process manager for storing the set of descriptors into a memory device coupled to the computing device, the set of descriptions being for analysis purposes of one or a plurality of substances. (Col. 24, lines 44-46)

With regards to claim 24, Sunshine et al. (USPN 6,422,061) teaches the system is provided in a computer. (1338; figure 13B)

With regards to claim 25, Sunshine et al. (USPN 6,422,061) teaches that the pattern recognition module comprises a plurality of pattern recognition algorithms. (Col. 28, lines 10-23)

With regards to claim 26, Sunshine et al. (USPN 6,422,061) teaches a data storage device coupled to the main process manager. (1212 & 1210; figure 12A)

With regards to claim 27, Sunshine et al. (USPN 6,422,061) teaches a network module coupled to the main process manager, the network module being coupled to a worldwide network of computers. (18; figure 16)

With regards to claim 28, Sunshine et al. (USPN 6,422,061) teaches a network module coupled to the main process manager, the network module being coupled to a world wide network of computers, the input module being coupled to a sensor device comprising a plurality of sensors through the world wide network of computers. (figure 16)

With regards to claim 29, Sunshine et al. (USPN 6,422,061) teaches a method for training computing devices for classification or identification purposes for one or more substances capable of producing olfactory information, the method comprising:

providing at least a first data from a first substance and a second data from a second substance to a computing device, the data being comprised of a plurality of characteristics to identify the substance; (Col.5 & 6, lines 45-65 & 1-5 )

normalizing at least one of the characteristics for each of the first data and the second data; (1376; figure 13d )



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correcting at least one of the characteristics for each of the first data and the second data; (Col. 28, lines 1-10)

processing one or more of the plurality of characteristics for each of the first data and the second data in the computing device using pattern recognition to form descriptors to identify the first substance or the second substance; (Col. 1, lines 30-36) and

storing the set of descriptors into a memory device coupled to the computing device, the set of descriptions being for analysis purposes of one or a plurality of substances. (Col. 5, lines 57-59)

With regards to claim 39, Sunshine et al. (USPN 6,422,061) teaches a method for teaching a system used for analyzing multidimensional information for one or more substances, the method comprising:

providing a plurality of different substances, each of the different substances being defined by a plurality of characteristics to identify any one of the substances from the other substances, the plurality of characteristics being provided in electronic form; (Col. 1, lines 37-46)

providing a plurality of processing methods, each of the processing methods being capable of processing each of the plurality of characteristics to provide an electronic fingerprint for each of the substances; (Col.1, lines 30-36)

processing each of the plurality of characteristics for each of the substances through a first processing method from the plurality of processing methods to determine a relationship between each of the substances through the plurality of characteristics of each of the substances from the first processing method; (Col. 1, lines 37-46)

processing each of the plurality of characteristics for each of the substances through a second processing method to determine a relationship between each of the substances through the plurality of characteristics for each of the substances from the second processing method; (Col. 1, lines 37-46)

processing each of the plurality of characteristics for each of the substances through an nth processing method to determine a relationship between each of the substances through the plurality of characteristics from each of the substances from the nth processing method; (Col. 1, lines 37-46)

comparing the relationship from the first processing method to the relationship from the second processing method to the relationship from the nth processing method to find the processing method that yields the largest signal to noise ratio to identify each of the substances; (Col.1, lines 40-45) and

selecting the processing method that yielded the largest signal to noise ratio, whereupon the relationships from the selected processing method provide an improved ability to distinguish between each of the substances using the selected processing method. (Col. 1, lines 23-46)

With regards to claim 40 and 50, Sunshine et al. (USPN 6,422,061) teaches pattern recognition is selected from the group consisting of PCA, HCA, KNN CV KNN Prd, SIMCA CV, SIMCA Prd, Canon Prd, and Fisher CV. (Col. 28, lines 11-24)

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With regards to claim 42, Sunshine et al. (USPN 6,422,061) teaches method for preprocessing information for identification or classification purposes, the method comprising:

- acquiring a voltage reading from a sensor of a sensing device, the sensor being one of a plurality of sensors that are disposed in an array; (figure 12A)

- determining if the voltage is outside of a baseline voltages of a predetermined range; and (Vref; figure 12A)

- if the voltage is outside of the predetermined range, rejecting the sensor of the sensing device for use in acquiring sensory information. (Vref; figure 12A)

With regards to claim 48, Sunshine et al. (USPN 6,422,061) teaches system for identifying a substance capable: of producing olfactory information, the system comprising:

- a user interface apparatus comprising a display, a graphical user interface, and a central processor; and (34;figure 17)

- a process manager operably coupled to the display through the central processor, wherein the graphical user interface is capable of imputing an information object from a client to manipulate olfaction data and displaying the identity of the substance received from a server. (figure 17)

With regards to claim 49, Sunshine et al. (USPN 6,422,061) teaches the information object is selected from the group consisting of digital filtering, preprocessing, pattern recognition, mean centering, autoscaling and cross validation. (Col. 15, lines 49-50)

With regards to claim 51, Sunshine et al. (USPN 6,422,061) teaches the data from the first substance and the second substance is data obtained for shipping container monitoring. (Col.28, lines 20-23)

With regards to claim 52, Sunshine et al. (USPN 6,422,061) teaches the data from the first substance and the second substance is data obtained for perimeter monitoring. (Col.27, line 19)

With regards to claim 53, Sunshine et al. (USPN 6,422,061) teaches the data from the first substance and the second substance is data obtained for explosive monitoring. (Col. 27, lines 12-13)

With regards to claim 54, Sunshine et al. (USPN 6,422,061) teaches the data from the first substance and the second substance is data obtained for hazardous spill monitoring. (Col. 27, lines 5-6)

With regards to claim 55, Sunshine et al. (USPN 6,422,061) teaches the data from the first substance and the second substance is data obtained for radiation monitoring. (Col.27, lines 4-7)



**Conclusion**


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lewis et al. (USPUB 2002/0141901) teaches the use of an array of polymeric sensors of varying thickness for detecting analytes in fluids.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aditya S Bhat whose telephone number is 703-308-0332. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 703-308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-5841 for regular communications and 703-308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Aditya S. Bhat  
November 13, 2003

  
John Barlow  
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